

XXXI.—On the Geographical Distribution of the Balænidæ or Right Whales. By Dr. J. E. GRAY, F.R.S., V.P.Z.S., F.L.S., &c.

PROF. VAN BENEDEN has read a paper to the Royal Belgian Academy on the geographical distribution of *Les Baleines*, which is published in the first number of the 'Bulletin' for 1868, accompanied by a map. He acknowledges only five species of Right Whales, having the following geographical distribution:—

1. *B. mysticetus*. The Arctic Ocean on both sides of Greenland, and on the coast of Siberia to the Sea of Okhotsk.

2. *B. biscayensis*. The North Atlantic, from latitude 65° to 45°, and a belt across the Atlantic to the coast of the United States, from lat. 45° to 50°.

3. *B. japonica*. A band across the North Pacific from lat. 60° to 45° on the west coast of America and 45° to 30° on the coast of Japan.

4. *B. australis*. A belt across the South Atlantic from lat. 25° to 30° on the west coast of Africa and lat. 35° to 50° on the coast of South America.

5. *B. antipodarum*. In a similar belt across the South Pacific from the west coast of South America, in lat. 45°, to New Zealand.

Thus it will be seen that M. Van Beneden supposes that Right Whales inhabit belts across all the seas except the Indian Ocean. This exception is extraordinary, as Capt. Maury's chart shows that Right Whales are comparatively abundant in a belt between latitude 30° and 50° from the Cape of Good Hope to Australia. It is in this belt that *Balæna marginata* and *B. australiensis* are most probably found; but M. Van Beneden ignores the existence of these species.

Mr. Blyth also mentions a species of Right Whale, under the name of *B. indica*, founded on some bones in the Museum of the Asiatic Society of Bengal, which he says inhabits "the Bay of Bengal, Arabian Sea, and occasionally enters the Persian Gulf." But this must be a mistake, as these places are situated in the torrid zone, which is to these animals, as Capt. Maury justly observes, "forbidden ground; and it is as physically impossible for them to cross the equator as it would be to cross a sea of flame. In short, these researches show that there is a belt, of from two to three thousand miles in breadth and reaching from one side of the ocean to the other, in which the Right Whale is never found." (Maury, Whale-Charts, p. 233.)

The distribution of the species here propounded by M. Van Beneden is simply founded on a theory: he does not give any authority for the range of any of the species; and I believe that no materials exist for verifying the distribution proposed.

M. Van Beneden compares his map with those of Captain Maury; but these maps were formed from actual observation made by the masters of whalers; and they only undertake to show where Sperm and Right Whales have been observed, without attempting to define which species of Right Whale inhabited the respective districts; indeed Capt. Maury seems only to allow two Right Whales—one inhabiting the northern, and the other the southern hemisphere.

I should be sorry to say that the species, or at least some of them, may not have the range that M. Van Beneden has assigned to them, because I have no material for such a statement; but many facts we do know militate against the theory. At the same time I do not think that science is profited by the propounding of such a map without more material, as it may mislead some zoologists to believe that authority for the distribution of the species may exist, and thus prevent them from studying the subject; and Cuvier has well observed that “when imagination is left at liberty in scientific pursuits, the result is almost always error and confusion.”

As a proof of the want of authority for the distribution here given, I may observe:—

1. That I am not aware that any bones or other remains (even a piece of whalebone) have ever been received of a Right Whale or *Balæna* caught on the coast of Siberia; so we cannot decide whether it is the *B. mysticetus* of the coast of Greenland that inhabits the seas of Siberia.

2. We only know the Right Whale found on the Siberian coast from a wooden model made by some Aleutians, though Capt. Maury's chart shows they are abundant in those seas. Some whalers seem to think they are like those in Baffin's Bay, and others that they are very different from them, remarking that “it is not the easiest thing in the world to distinguish the different kinds of whales, even to those who have been in the whaling business; and a ship must be brought close by a whale to tell for certain his kind” (Whale-Charts, p. 255).

Capt. Roy, who believes “the Whales of Behring's Straits and Baffin's Bay are the same,” observes, “they differ very much from the Kamtschatka or North-west Whale, or the Right Whale of the China seas,” showing that in his opinion the Right Whale of the coast of Siberia and Kamtschatka is

different from, and not, as M. Van Beneden supposes, the same as *B. mysticetus*.

3. *Balena biscayensis* is only known from the skeleton of a young specimen taken at St. Sebastian, in the Bay of Biscay, now in the Museum at Copenhagen. Mr. Flower informs me that this skeleton belongs to my genus *Cuvierius*, which has brittle whalebone, with a large coarse fringe (which easily splits into strips), and a bifid first rib. It is very doubtful if this is the Whale found on the coast of North America, as it ought to be according to M. Van Beneden's chart. The only reliable account of the Whale of that coast is to be found in Dudley's paper in the 'Philosophical Transactions' (xxxiii. p. 258), who says the "Scrag-Whale" (*B. gibbosa*, Erxleben) has white whalebone, "that won't split," which seems to show that it was a true *Balæna*, which is separated from *Eubalæna* on account of the toughness, flexibility, and unsplittability of its whalebone; and, indeed, Dudley says the Scrag-Whale "is nearest the Right Whale (*B. mysticetus*) in figure and quantity of oil." This does not prove that *B. biscayensis* does not inhabit the coast of North America; but it goes far to show that a species very like *B. mysticetus* does; and M. Van Beneden does not note this fact, though he places without doubt the geographical range of *B. biscayensis* as extending to that country, for which there is not a particle of evidence. It may be observed that Capt. Maury's 'Whale-Charts' do not offer any confirmation of Prof. Van Beneden's distribution of this species of Right Whale: they are very rare in the North Atlantic and off the coast of North America; a few have been observed in the midchannel between Morocco and North America, but they were probably animals accidentally carried out of their course.

Professor E. D. Cope, of Haverford College, United States, described the "Black Whale" of the whalers of the east coast of the United States, from a nearly complete skeleton in the Museum of the Academy of Natural Sciences in Philadelphia, under the name of *Balæna (Eubalæna) cisarctica* (Journ. Acad. Nat. Science, Philad. 1865). This may be the same as *B. nodosa*; but it is certainly not the *Balæna (Hunterius) biscayensis*; for it has "fourteen pairs of ribs, the anterior single-headed," and therefore is a true *Eubalæna*. Prof. Cope says, "Individuals are occasionally cast ashore eastward, and some are known to enter New-York harbour. They were formerly abundant about the mouth of the Delaware: a letter of William Penn, dated 1683, states that eleven were taken that year about the capes. Five specimens are stated to have been seen in the Delaware River since that time; and ten of great size are recorded to have been found on the

coast of Maryland. Three have come under my notice—one taken opposite this city three years ago, one cast ashore in Rehoboth Bay, Del., and one in Molzach Bay, Va."

B. japonica.—I am not aware if any bones or other remains of this species are to be found in any European museum, except the whalebone that is imported under the name of "north-west-coast whalebone," meaning thereby that of the whales of the north-west coast of America. I first brought this whalebone under the notice of zoologists in the 'Zoology of the Erebus and Terror.' There is no doubt that an extensive whale-fishery is carried on by the Japanese, from the works they have published on the subject; and it is very probable that the whalebone imported as north-west whalebone may be the same as that obtained by the Japanese; but we have no means of determining this point, as I have never been able to procure any whalebone imported from Japan. This is probably what the whalers call the Kamtschatka or North-west Whale, which they say is very different from the whale of Behring's Straits and Baffin's Bay (Whale-Charts, p. 255).

B. australis.—This species is only known from two skeletons brought from the Cape of Good Hope by M. Delalande, now in Paris, and some bones, sent from the Cape, in the British Museum; but we have no material to determine what is the species of whale that inhabits the vicinity of the Falkland Islands and the east coast of South America.

It is supposed that the whalebone sold in London as the "South-Sea whalebone" is the baleen of this species; but I am informed that that kind of whalebone is collected by the ships that fish in the great southern oceans; and there certainly is found a second most distinct species of Right Whale near the Cape of Good Hope. A very fine skull of an adult and a nearly complete skeleton of a young individual, both obtained from the Cape of Good Hope by Dr. Horstock, are contained in the Leyden Museum. These are briefly described by Schlegel, in his 'Abhandlungen aus dem Gebiete der Zoologie,' part 1, p. 137, as *B. mysticetus australis*; and I have named them *Hunterius Temminckii* (Cat. of Seals and Whales in British Museum, p. 98). M. Van Beneden entirely overlooks this species in his distribution of the Whales in his chart.

Balæna antipodarum is only known to zoologists from a drawing by Dieffenbach and a skeleton in the Paris Museum which was obtained in New Zealand. Dieffenbach gives some account of the migration of this species, but he gives no authority for extending its geographical distribution to the west coast of South America. I have never seen any whalebone said to have come from New Zealand, though Dieffenbach says

the strand of Tory Channel is strewed with the baleen and the bones of this Whale.

Capt. Maury's Whale-Charts show that Right Whales of some species have been observed in almost all parts of the the South Sea, from the south of the Cape of Good Hope to the coast of Van Diemen's Land (that is, a belt of sea from latitude 35° to 50°), and even a few in latitude 55° . I have no means of determining if the Right Whale inhabiting this district is *B. australis*, *B. Temminckii*, *B. australiensis*, or a peculiar species not yet determined. Prof. Van Beneden, in his chart, does not mention any Right Whales being found in the district.

I think that we must wait for more material before we can attempt a sketch of the geographical distribution of these animals in which any reliance can be placed. The only information we possess may be thus summed up:—

Capt. Maury's Whale-Charts show that Right Whales are found in almost all seas, from the poles to within 35 or 30 degrees of latitude on each side of the equator. An experienced whaler observes that "Right Whales are as seldom seen in that belt as Sperm-Whales are found out of it." Right Whales, that were comparatively common in the temperate part of the North Atlantic, are now very rare: they were probably greatly destroyed by the whalers who formerly fished there, as they do now in the Southern Sea and North Pacific; and the great traffic, and the bay being all inhabited, prevent these animals having the requisite privacy for replenishing their race. Maury's maps show how few are now found in this part of the ocean; and only a single specimen of the *B. biscayensis* is in any collection; and the Scrag-Whale (*B. nodosa*) of the coast of North America has not been observed since Dudley's time.

1. We only know, from the examination of specimens, that *Balæna mysticetus* is found in Greenland.

2. *Balæna biscayensis*, on the coast of Spain.

3. *Balæna australis* and, 4, *B. Temminckii* at the Cape of Good Hope.

5. *Balæna antipodarum*, New Zealand.

6. *Balæna australiensis* and, 7, *B. marginata* on the shores of Australia; the latter only known from some blades of its whalebone.

8. *Balæna japonica*, of Japan, which is probably the whale that yields the baleen sold as north-west whalebone. No other part of this Whale is known to exist in any museum.

9. *Balæna nodosa*, the Scrag-Whale of Dudley, inhabits the coast of North America; but, unfortunately, no specimen

or part of a specimen of this species is known to exist in any museum.

10. *Balæna cisarctica*, the Black Whale of the whalers of the east coast of the United States of America, may be the same as *B. nodosa*. There is a skeleton in the Museum of the Academy of Sciences, Philadelphia; and it is probably a skeleton of this species that "is exposed to all weathers on the roof of the Museum of Comparative Zoology at Cambridge, Massachusetts." (See Agassiz, Rep. 1864-65.)

How far the species indicated range beyond the habitats whence they were received is yet to be discovered and recorded. No doubt their range is influenced by many local circumstances (peculiarities in the currents, and disposition of the food) that are not easily observed or understood. For example, Capt. Maury observes:—"The Sperm-Whale, according to the result of this chart, appears never to double the Cape of Good Hope. It doubles Cape Horn. Since this fish delights in warm water, shall we not expect to find off Cape Horn an under-current of warm water heavier with its salt?" (Maury, Whale-Charts, p. 267.)

XXXII.—On a Variety of *Spongilla Meyeni* from the River Exe, Devonshire. By H. J. CARTER, F.R.S. &c.

Spongilla Meyeni (*Ephydatia*, Gray)*, var. *Parfitti*, Carter.

Massive, flat, more or less lobed, sessile, spreading. Colour greenish, yellowish. Texture friable. Structure reticulate. Seed-like bodies spheroidal, accumulated towards the base, largest about $\frac{1}{100}$ inch in diameter. Spicules of skeleton fusiform, slightly arched, acerate, abruptly pointed, largest $\frac{1}{50}$ inch long; of two kinds, smooth and spinous; one-third of the largest thickly set with short vertical spines throughout, except towards the points. Spicules of seed-like body birotulate, $\frac{1}{200}$ inch long, more or less sparsely scattered throughout the wall of the seed-like body, wherein they are arranged vertically, with the outer rotule projecting a little beyond the amorphous (siliceous?) substance that chiefly keeps the whole together; rotules deeply dentate, stellate, wider in diameter than the spicular shaft which unites them; shaft cylindrical, the same size throughout.

Hab. River Exe, Devonshire; Salmon-pool Weir, near Exeter. On a beam of wood over which the water falls. In masses attaining a maximum length of 1 foot, with $1\frac{1}{4}$ inch thickness (Mr. Parfitt).

* Proc. Zool. Soc. Lond. May 9, 1867, p. 550.